

# Florida Butterflies

*Jaret Daniels*

On a recent butterfly-monitoring trip to south Florida, it occurred to me that I have made this long and at times mind-numbing drive down the peninsula from Gainesville approximately sixty-five times over the past twenty years. Since my first trip, much of the surrounding landscape has changed, and not for the better. Roadsides and natural areas used to be alive with butterflies, but these days, unfortunately, such sights are more the exception than the rule. As with a great many other areas, the environment of south Florida and the Florida Keys has been significantly altered and continues to face many new emerging threats. Numerous species

have suffered the consequences, butterflies included.

The butterfly fauna of south Florida is strongly influenced by the presence of the West Indies island chain to the south and has long been a destination for collectors seeking local rarities or the odd tropical vagrant. Today, it appeals to butterfly watchers for the same reasons. The Florida Keys in particular boast a remarkably diverse fauna—more than a hundred recorded species in a relatively small geographic area. In addition, some sixteen subspecies are endemic, or nearly so, to tropical Florida. Collections, surveys, and other observations offer a wealth of valuable information



Change is a constant for butterflies in south Florida and the Keys. The gray ministreak (*Ministrymon azia*) may be encountered one year and then not seen for the next two or three. Photograph by Kim Davis and Mike Stangeland.



Evidence suggests that an increasing number of Florida's butterflies are in trouble. The Florida duskywing (*Ephyriades brunnea floridensis*) is a species in decline. Photograph by Bill Bouton.

about the past, present, and future of this unique community of butterflies. Unfortunately, within the last several decades, approximately thirty butterfly species have experienced alarming declines, a loss of diversity that has received surprisingly little attention.

Change is nothing new to south Florida environments. They are by nature dynamic systems that regularly experience disturbances from tropical cyclones and other natural events, as well as from human activity. Florida's proximity to the West Indies has also brought about change by the colonization of new butterfly species from the islands, as evidenced by an ever-expanding list of species records. Island populations, whether inhabiting a true archipelago or defined as living within pockets of remaining habitat surrounded by inhospitable landscapes, are inherently volatile. They go through constant change in which extinction is balanced by the regular influx of immigrants.

For those who have spent time in the Florida Keys, or in any place in extreme south Florida for that matter, it is quite clear that there is a tremendous turnover of species from month to month and from year to year. Butterflies such as the Cuban crescent (*Anthanassa frisia frisia*), the amethyst hairstreak (*Chlorostrymon maesites*), and the gray ministreak (*Ministrymon azia*) remain unseen for extensive periods and then, seemingly out of nowhere, pop up only briefly and in just one site. The same inconsistencies can often be witnessed for more widespread south Florida species, such as the barred yellow (*Eurema दौरa*), Julia (*Dryas iulia*), malachite (*Siproeta stelenes*), and Florida white (*Glutophrissa drusilla*). A monitoring trip to Matheson Hammock Park in Miami or to Key Largo may turn up numerous individuals of these species, while subsequent visits to the same location may result in no sightings. Still other butterflies—the atala (*Eumaeus atala*) and the



The great southern white (*Ascia monuste*) is one of a variety of species that are common in many years but scarce in others. The reasons for this are little understood. Photograph by Bill Bouton.

great southern white (*Ascia monuste*), for example—undergo considerable population fluctuations, experiencing boom and bust years, more or less cyclical for some commoner species but variable and little understood for others.

Over the years, researchers and butterfly enthusiasts have gotten used to this inherently unpredictable fauna, but recently the changes have become all too predictable. Survey after survey seem to support the same trend of low numbers and limited sightings, and the resulting data suggest a system-wide decline. By the early 1980s, butterflies such as the little metalmark (*Calephelis virginensis*), Hayhurst's scallopwing (*Staphylus hayhurstii*), and the palmetto skipper (*Euphyes arpa*) had disappeared from the Florida Keys. In the years that followed, other butterflies, including the Bahamian swallowtail (*Papilio andraemon*), apparently winked out. Soon after the

destruction caused by Hurricane Wilma in 2005, known populations of the nickerbean blue (*Cyclargus ammon*) and the Florida leafwing (*Anaea troglodyta*) were lost on Big Pine Key. Most alarming, though, has been the likely extirpation of the Rockland grass skipper (*Hesperia meskei pinocayo*), endemic to Florida, and the Zestos skipper (*Epargyreus zestos zestos*), found nowhere else in the United States. If indeed gone, they would represent the first documented losses to Florida's butterfly fauna and would be among the few butterfly extinctions known to have occurred in the entire United States.

Many other south Florida butterflies are in very serious trouble. The well-publicized collapse of the Miami blue (*Cyclargus thomasi bethunebakeri*) from a widespread, locally common butterfly to a critically imperiled candidate for federal listing exemplifies the

situation. Today, the Miami blue barely clings to existence in the Lower Keys, despite considerable and aggressive efforts at conservation. What may be even more disturbing, though, is that such declines are occurring on conservation lands, even in historic stronghold locations. Populations of the tropical buckeye (*Junonia evarete*), the Florida purple wing (*Eunica tatila*), Bartram's hairstreak (*Strymon acis*), the Florida white, Klot's palatka skipper (*Euphyes pilatka klotsi*), the Dina yellow (*Pyrissitia dina*), the Florida duskywing (*Ephyriades brunnea floridensis*), and Schaus' swallowtail (*Papilio aristodemus ponceanus*) are either in decline or are critically habitat-limited, or both.

The primary factors triggering the losses are poorly understood at best. A variety of anthropogenic and biological factors have been implicated, including habitat loss and fragmentation, mosquito-control spraying, fire (both

wild and intentional), exotic predators and parasitoids, and inadequate habitat management, along with the typical assortment of demographic, genetic, and environmental influences on the persistence of small, widely separated populations. Moreover, basic species-specific data—regarding the general ecology, population dynamics, threats, habitat requirements, and best management practices—are incomplete, and therefore obtaining these data must be a high priority for future research.

Despite the many problems, not all the news is bad. The magnitude of these declines sparked the formation of a statewide working group to address butterfly conservation and recovery needs in Florida more effectively. Initiated in 2007 and led by the Florida Fish and Wildlife Conservation Commission, the Imperiled Butterflies of Florida Workgroup represents the first such coalition in the Southeast to focus on insects. The workgroup intends to promote the regular exchange of information among agencies, identify research priorities and educational needs, and catalyze the development of additional partnerships for butterfly recovery. With this renewed interest and engagement, I am optimistic that, in another twenty years, the landscape seen out of the window during trips across Florida will once again dance with butterflies.



The Miami blue (*Cyclargus thomasi bethunebakeri*) is one of Florida's best-known butterflies, thanks largely to campaigns to protect it and save it from extinction. Photograph by Jaret Daniels.

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